IDS-2

DERWENT-ACC-NO: 1995-225989

DERWENT-WEEK: 199953

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TITLE: Pressure vessel for chemicals processing - comprises outer shell with discharge outlet at bottom end and contains internal heat transfer element to heat and/or cool vessel

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PATENT-ASSIGNEE: SUMITOMO HEAVY IND LTD[SUMH]

PRIORITY-DATA: 1993JP-0353856 (December 27, 1993)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 659475 A1	June 28, 1995	E	018	B01J 019/00
JP 2975832 B2	November 10, 1999	N/A	004	B01J 019/00
JP 07185314 A	July 25, 1995	N/A	005	B01J 019/00
TW 255873 A	September 1, 1995	N/A	000	B65D 083/00
CN 1108965 A	September 27, 1995	N/A	000	B01J 003/04
US 5667758 A	September 16, 1997	N/A	015	F28D 007/00
EP 659475 B1	April 21, 1999	E	000	B01J 019/00
DE 69418007 E	May 27, 1999	N/A	000	B01J 019/00

DESIGNATED-STATES: BE DE FR GB IT BE DE FR GB IT

CITED-DOCUMENTS: 02Jnl.Ref; FR 1205978 ; FR 2473902 ; GB 2022454 ; JP 01274837 ; JP 59180290 ; US 3282459 ; US 4552724

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-DATE
EP 659475A1	N/A	1994EP-0120010	December 16, 1994
JP 2975832B2	N/A	1993JP-0353856	December 27, 1993
JP 2975832B2	Previous Publ.	JP 7185314	N/A
JP 07185314A	N/A	1993JP-0353856	December 27, 1993
TW 255873A	N/A	1994TW-0111883	December 19, 1994
CN 1108965A	N/A	1994CN-0107624	December 27, 1994
US 5667758A	Cont of	1994US-0356536	December 15, 1994

US 5667758A	N/A	1996US-0720072	September 27, 1996
EP 659475B1	N/A	1994EP-0120010	December 16, 1994
DE 69418007E	N/A	1994DE-0618007	December 16, 1994
DE 69418007E	N/A	1994EP-0120010	December 16, 1994
DE 69418007E	Based on	EP 659475	N/A

INT-CL (IPC): B01J003/00, B01J003/04 , B01J014/00 , B01J019/00 , B65D083/00 , F28D007/00

ABSTRACTED-PUB-NO: EP 659475A

BASIC-ABSTRACT:

Processing vessel has an outer shell (1) with a discharge outlet (12) at its bottom end, and contains an internal heat transfer element (5) which is used for heating and/or cooling the vessel contents. The element is in the form of an inner barrel (5a) which contains the materials etc. (16) inside the shell, and which has flow passages (9) through which a temp. control fluid may pass. The inner barrel is spaced (14) from the shell by a fixing system, and an upper closure/expansion element (13a) ensures that the space in the barrel is isolated from the clearance space (14) between the barrel and the vessel. A small opening (18) is provided to allow equilisation of press. between the two spaces. Various embodiments of the flow passages in the inner barrel are claimed.

USE - For carrying out chemical processing involving heat transfer, used in e.g. chemicals, petrochemicals or food mfr. esp. useful where a large thermal load is experienced during processing.

ADVANTAGE - Vessel is easier and cheaper to construct and maintain than prior art devices. Gives improved heat exchange and more even heating or cooling, with improved operating efficiency and product quality.

ABSTRACTED-PUB-NO: EP 659475B

EQUIVALENT-ABSTRACTS:

Processing vessel has an outer shell (1) with a discharge outlet (12) at its bottom end, and contains an internal heat transfer element (5) which is used for heating and/or cooling the vessel contents. The element is in the form of an inner barrel (5a) which contains the materials etc. (16) inside the shell, and which has flow passages (9) through which a temp. control fluid may pass. The inner barrel is spaced (14) from the shell by a fixing system, and an upper closure/expansion element (13a) ensures that the space in the barrel is isolated from the clearance space (14) between the barrel and the

vessel. A small opening (18) is provided to allow equilisation of press. between the two spaces. Various embodiments of the flow passages in the inner barrel are claimed.

USE - For carrying out chemical processing involving heat transfer, used in e.g. chemicals, petrochemicals or food mfr. esp. useful where a large thermal load is experienced during processing.

ADVANTAGE - Vessel is easier and cheaper to construct and maintain than prior art devices. Gives improved heat exchange and more even heating or cooling, with improved operating efficiency and product quality.

US 5667758A

The processing vessel comprises: a vessel body having an inner wall and a discharge orifice at its lower end; a temperature control element inside the vessel body comprising at least one flow passage through which a temperature control medium, for at least one of heating or cooling, is caused to flow, where the temperature control element defines an inner barrel in which a processing material is accommodated in heat exchange relation with the temperature control element; a device for spatially fixing the temperature control element in the vessel body proximate to and spaced from the inner wall thereby defining an unfilled chamber between the temperature control element and the inner wall of the vessel body; a closure device for enclosing the chamber between the vessel body and the temperature control element thereby creating a closed chamber; device for preventing the processing material from entering the closed chamber; and a device for openly communicating the interior of the inner barrel with the closed chamber, without communication with space exterior to the vessel, whereby the pressure in the inner barrel is the same as the pressure in the closed chamber.

CHOSEN-DRAWING: Dwg.1/3 Dwg.1/13

TITLE-TERMS: PRESSURE VESSEL CHEMICAL PROCESS COMPRISE OUTER SHELL DISCHARGE OUTLET BOTTOM END CONTAIN INTERNAL HEAT TRANSFER ELEMENT HEAT COOLING VESSEL

DERWENT-CLASS: J04 Q34 Q78

CPI-CODES: J04-X; J08-C;

SECONDARY-ACC-NO:

CPI Secondary Accession Numbers: C1995-103988

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DOCUMENT-IDENTIFIER: EP 659475 A1
TITLE: Processing vessel.
PUBN-DATE: June 28, 1995

INVENTOR-INFORMATION:

NAME	COUNTRY
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NISHIMI, HARUYUKI	JP

ASSIGNEE-INFORMATION:

NAME	COUNTRY
SUMITOMO HEAVY INDUSTRIES	JP

APPL-NO: EP94120010
APPL-DATE: December 16, 1994

PRIORITY-DATA: JP35385693A (December 27, 1993)

INT-CL (IPC): B01J019/00

EUR-CL (EPC): B01J019/24 , B01J003/04 , B01J019/00 , F28D001/06 , F28D009/00 , B01J003/04

ABSTRACT:

CHG DATE=19990617 STATUS=O> A processing vessel in which a temperature control element (5) having a helical flow passage (9) formed on an outer surface of an inner barrel (6) containing a processing liquid and a heating or cooling temperature control medium caused to flow through the flow passage is disposed in a vessel body with a spacing formed between the temperature control element and an inner surface of the vessel body. The spacing between the vessel body and the temperature control element is closed at a certain position to form a closed chamber. Preferably, a system for generally equalizing the pressures in the inner barrel and the closed chamber is provided. The temperature control element can be assembled in the vessel body after being manufactured outside the vessel body. Therefore, the processing vessel can be manufactured at an improved efficiency and can be maintained by ordinary in-vessel maintenance operations.